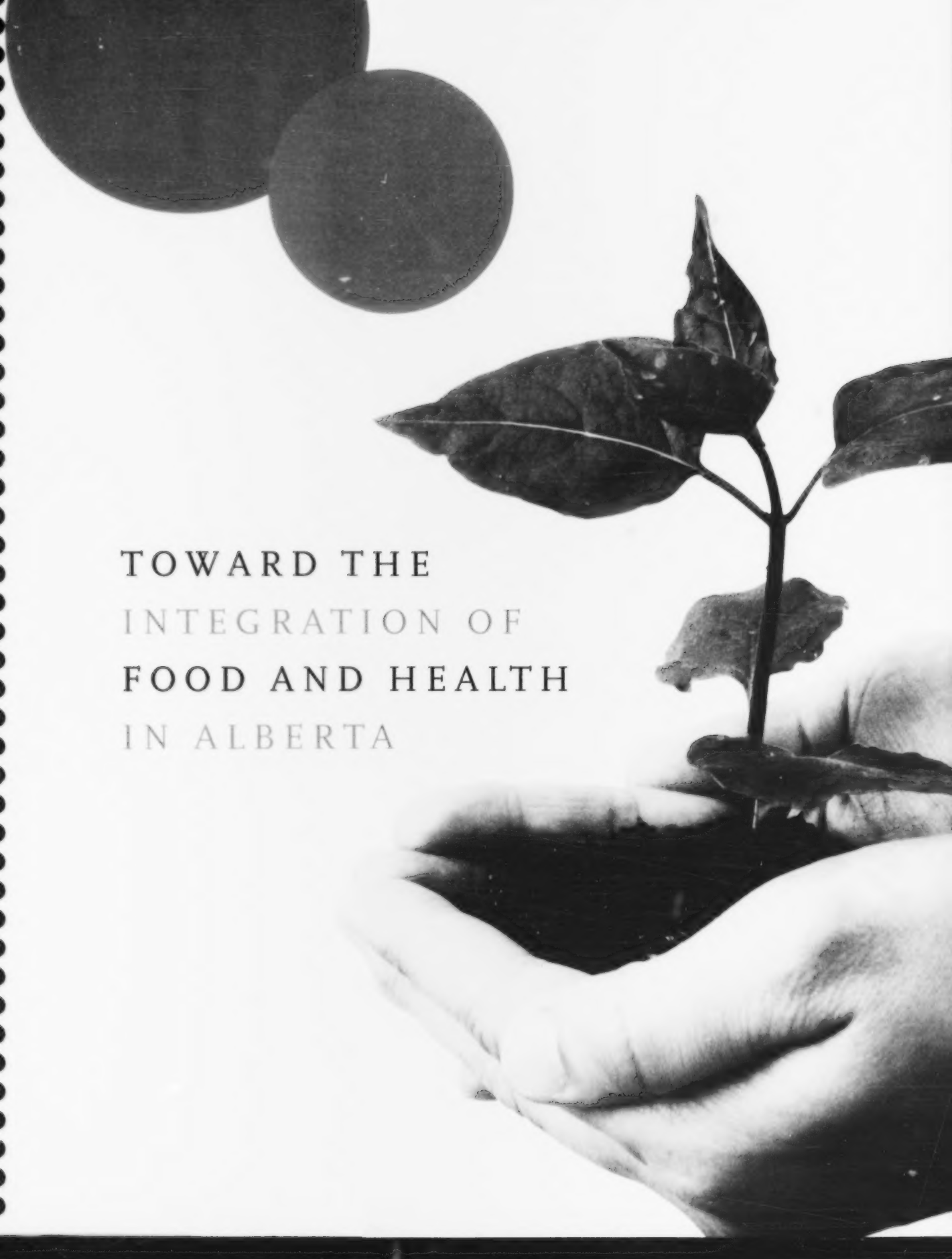
TOWARD THE INTEGRATION OF FOOD AND HEALTH IN ALBERTA



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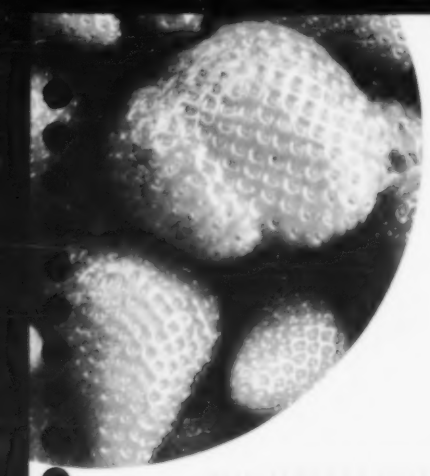
Fact:

Sound initiatives in food and health will be of great value to Alberta as we endeavour to achieve the vision of healthier Albertans and a strong, diversified economy.



held in Banff, Canada from April 18 to 20, 2007, was a unique opportunity for collaborative stakeholder discussions in the food and health sectors. It provided a venue to help fuel the move toward a more unified food and health approach in Alberta.

Topics that guided Think Tank discussions included the future of Alberta's food industry, current research, policies and issues in food and health, as well as methods to promote healthier living. As a result, participants arrived at four key recommendations:

1. Health and food sectors work together on identified points of convergence;
2. Apply a systems approach to creating transformative innovations in food and health;
3. Address the complex behavioural challenge required to make healthy food choices; and
4. Influence through education.

The following document highlights the major elements of the Think Tank and suggests avenues for translating ideas into action. The Think Tank will contribute to the development of a food and health innovation framework for Alberta. Sound initiatives in food and health will be of great value to Alberta as we endeavour to achieve the vision of healthier Albertans and a strong, diversified economy.

We would like to take this opportunity to thank all those who contributed to the Think Tank and look forward to advancing the food and health agenda.

Regards,

Co-Chair
ALSI

Co-Chair
AARI

Past-President
AHFMR

Fact:

This publication is designed to take you inside the complex issues at work, and inspire you to get involved in finding solutions.

Peas are a good low calorie source of protein. A 100 g serving of peas contains more protein than a whole egg and has less than one gram of fat.

MOMENT OF OPPORTUNITY

An Alberta family walks into a grocery store. The variety of available foods is virtually limitless. Relative to the average provincial income, its cost is among the lowest in the world.

Nutritionists tell us that diets should be moderate in terms of calories and diverse in terms of the types of food we eat. We should go easy on salt, sugar and fats. We should enjoy fresh fruits, vegetables, grains and meats as part of a balanced diet.

Despite having the knowledge, our representative Alberta family chooses a diet that is far less balanced and less healthy than is good for them. What's more, they often eat portions that are much larger than their nutritional needs. Over time, these dietary choices can produce troubling levels of diabetes, heart disease and a range of other chronic and costly health conditions.

Healthy food is readily available. For many, it is available at a reasonable cost. Why doesn't this family choose it more often? The answer could be that this Alberta family hasn't yet made the connection between food and health.

This family makes its choices in a complex environment. The agriculture and food industry, governments, the health care community and many other factors influence what this family chooses to buy and eat. Issues from food labeling to food policy to retail economics to popular culture to individual behavior all play a role.

It's time to ask: how can food address a growing number of public health concerns and chronic diseases? What changes can this Alberta family make – along with governments, industry and health care providers – to have a healthier future? How can such changes be coordinated society-wide to create growth in Alberta's agriculture and food industry, locally and globally?

The 2007 Alberta International Food and Health Think Tank was held to discuss these questions. This publication is designed to take you inside the complex issues at work, and inspire you to get involved in finding solutions.

Sponsors:

Alberta Life Sciences Institute (ALSI)

Alberta Agricultural Research Institute (AARI)

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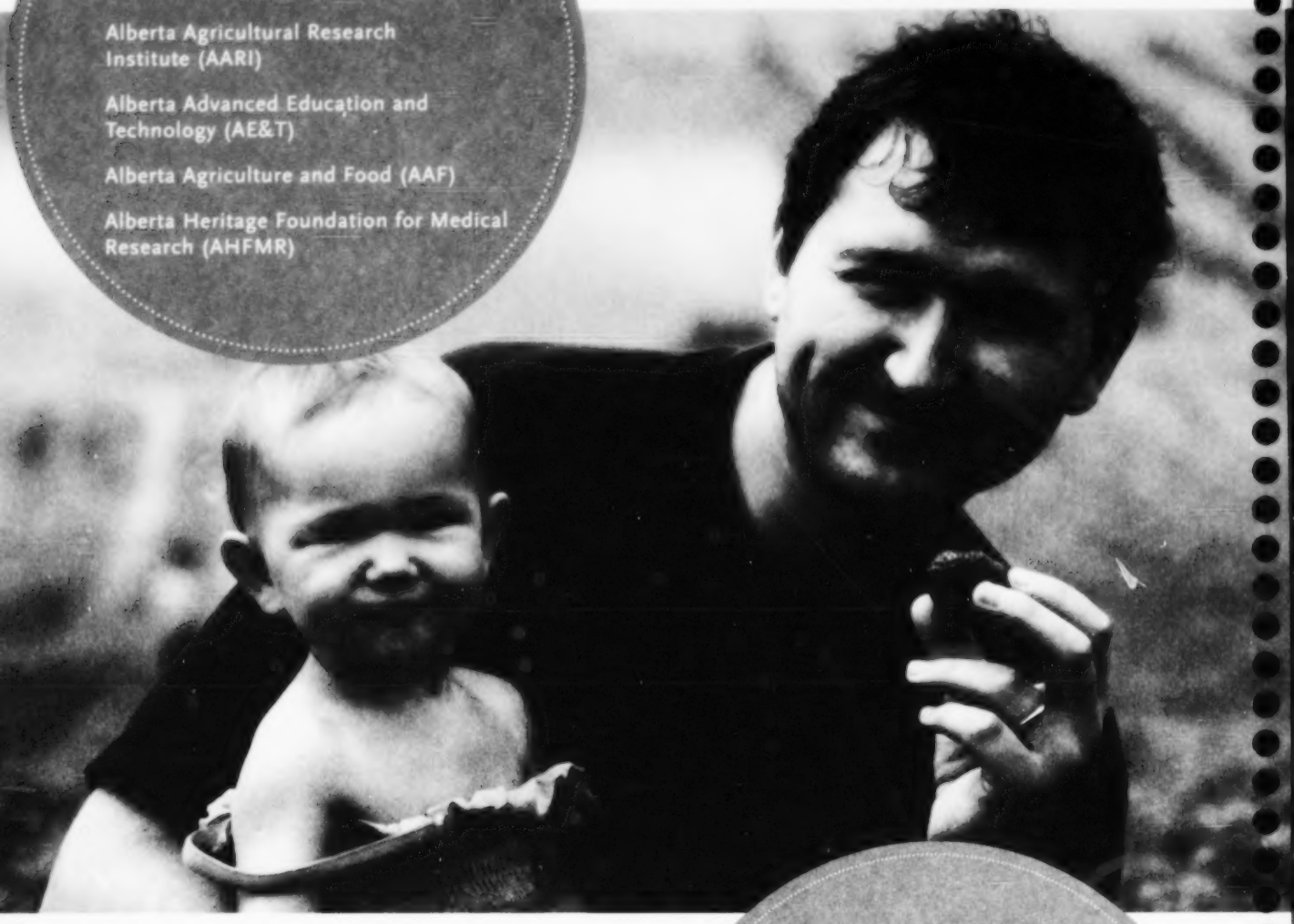
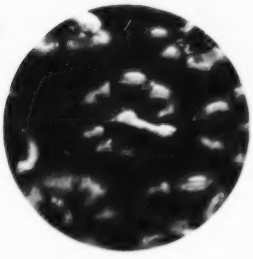




Green peppers have twice the amount of vitamin C by weight than citrus fruits. Red bell peppers have three times as much vitamin C as the green varieties and are a good source of beta carotene.

Themes:

1. Food and Disease Prevention and Illness Attenuation
2. Food Policy and Population Health Outcomes
3. Industry and Consumer Perspectives

SETTING THE STAGE

THE TASK IS LARGE. THE CHALLENGE COMPLEX. HELD APRIL 28 TO 30, 2007 IN BANFF, THE ALBERTA INTERNATIONAL FOOD AND HEALTH THINK TANK WAS AN EFFORT TO UNDERSTAND THE ISSUES AND IDENTIFY A PLATFORM FOR FUTURE ACTION.

MANDATE

CREATE a forum for discussion that enables better understanding of the opportunities, issues and constraints facing the agriculture, food and health sectors.

EXPLORE the innovation required to address opportunities and challenges facing two key sectors: food and agriculture, and health and medical sciences.

DETERMINE how the food and health industries can more effectively work together to address the broader health challenges facing society, in turn driving new economic benefits.

IDENTIFY and ENCOURAGE areas of convergence that will lead to new collaborations and most importantly the development of new knowledge in the search for food's role in health solutions.

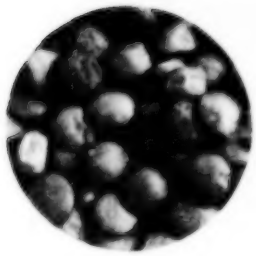
FORMAT

Each theme area featured a key presenter, with two follow-up presentations and a group discussion. The theme-focused presentations were followed by a general discussion open to all Think Tank participants.

Participants were guided by such questions as:

1. What should food and the food industry be like in 15 years to have a significantly increased positive impact on health outcomes?
2. What is current research telling us about food's impact on health outcomes? What is the research suggesting for such areas as: (a) food fortification/modification (b) functional foods, and (c) natural health products? Finally, what advice can we give to consumers and patients?
3. Which food policies can best influence population health? Which policies are working? What needs to be changed?
4. What can industry, the research community and governments do to create and promote healthy food choices? What is the research telling us about food consumption trends and influences? What can be done to stimulate positive choices?

BUILDING CONSENSUS



THE ALBERTA INTERNATIONAL FOOD AND HEALTH THINK TANK ACHIEVED BROAD AGREEMENT ON KEY ISSUES AFFECTING THE INTEGRATION OF HEALTH OBJECTIVES AND FOOD-RELATED ACTIVITIES.

The Think Tank's presentations and follow-up discussions showed a high degree of agreement on what matters most. A summary of these points follows.

Vision for an ideal future. By 2020, population health is greatly improved through food, food ingredients, diet and nutrition. Research evidence supporting and strengthening the understanding of the food-health connection will exist. Health and food solutions will be increasingly driven by advanced diagnostics, such as nutrigenomics, and supported by personal health and nutrition advisors, practitioner nurses, professionals and trainers. Healthier foods will be readily available and can achieve positive health outcomes. This future will require major intervention strategies that dramatically impact the food choices available and how consumers make those choices.

Health care system faces cost and disease pressures. Participants expressed strong concern that the health care system, as it currently operates, is not sustainable. Costs are rising at two or three times the rate of inflation. These costs are projected to increase even faster in future, with rising obesity levels, increasing rates of chronic disease (diabetes, cardiovascular disease etc.) and an aging population. Studies suggest that food environments play a role in population health trends. There is a growing sense that a series of key preventative measures need to be implemented to address this situation. The convergence of food and health can make an important contribution to the achievement of this objective. One opportunity lies in the fact that roughly 30 per cent of community pharmacies in Alberta are located in grocery stores, staffed by professionals mandated to provide health information to consumers. As such, they could positively influence food purchase decisions.

The future of food is healthy. Obesity, intimately related to food and a catalyst to several other chronic diseases, remains a major challenge. Most Canadians do not eat healthy diets and consume insufficient amounts of fruits, vegetable and foods derived from grain products. A growing body of evidence indicates that the future of food, nutrition and diets will be 'health' focused. New sciences, as well as the emergence of nutraceuticals and functional foods, are demonstrating how food ingredients, diets and methods of delivery (such as slowing carbohydrate absorption) can reduce

Fact:

Alberta is particularly strong in several food products with known health benefits, including oilseeds, pulses, berries, cereal grains and lean meats.

diseases such as diabetes and cardiovascular disease.

Western Canada has valuable food/health assets. The region is particularly strong in several food products with known health benefits, including oilseeds, pulses, berries, cereal grains and lean meats. Indeed, it may be possible for Western Canada to formulate a Canadian diet to effectively prevent many growing problems associated with obesity and poor nutrition. There is also strong interest in healthier eating. A 2005 survey reported that 71 per cent of Canadians regularly use natural health products. Furthermore, industry capacity to research, develop and commercialize products is building. Several organizations and companies have and are committing to strategies in the food and health arena. These include Pulse Canada, Dow AgroSciences and the Richardson Centre for Functional Foods and Nutraceuticals.

Technology will fuel food/health convergence. New technologies and new diagnostics are changing health management strategies. Tools such as nutrigenomics are making it possible to develop personalized diet and health care strategies based on an analysis of the individual genome.

Solid research-based evidence is needed, but is often lacking. Medical and health practitioners generally require research-based evidence before changes in diet or nutrition are recommended. While a body of research exists and continues to emerge, some Think Tank participants thought that data is either insufficient or not comprehensive enough to evoke structural change in diet or food choices. More emphasis needs to be placed on research that builds a fundamental knowledge of how food and health connect.

Behavior, both individual and population-wide, is a complex issue. Factors contributing to this complexity include a host of personal, psychological, environmental and social factors. Much of the research and related strategies tend to focus at the cognitive level and does not deal with the more complex emotive level. Furthermore, we live in a social environment in which messages (including marketing) are frequent, effective and at other times conflicting.

Food labeling can help in theory, but adds confusion in practice. For the most part, labeling is either not understood or misunderstood. Current labeling does little to limit portion size and may even induce excess consumption in view of generic health claims associated with natural health products – a new product category.

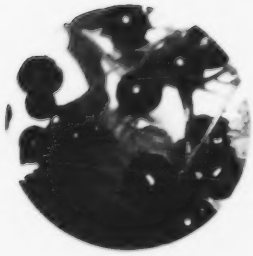
For industry, the customer rules. Industry participants made very clear that their primary motive is to meet and satisfy customer wants. Simply put: the customer decides, with major drivers being taste, convenience and cost. While health and nutrition are strong selling points, in most cases these are not sufficient. Retailers are driven by consumers, who in turn are driven by key opinion leaders, marketing, government programs and regulations.

Food safety, not health, has guided Canada's food policy. The current policy framework has been successful in providing Canadians with safe food. However, new policies to stimulate adoption of healthier diets for healthier outcomes remain to be developed. Two fundamental questions must be answered: (1) What is the appropriate structure for new policy? (2) What are the research questions and the data requirements to measure and manage uncertainties?

A multi-disciplinary approach is needed. Overall, it was agreed that a complex systems approach is required to create meaningful behavioral change toward healthier eating and healthier outcomes. To this end, strategies must be multi-disciplinary, comprehensive, targeted, well-managed and able to provide very specific measures of what is working and what is not. It is recognized that change will occur one step at a time. It is important to learn from each step and use these insights to build increasingly effective strategies over time.

Finding:

Foods can and will play a critical role in the health of the population. The complexity of factors at work generated much discussion but few concrete agreements.



Black currant oil and juice extracts appear useful as an antioxidant source and in treating rheumatoid arthritis. The oil and juice extracts also exhibit limited antimicrobial and anticancer properties.

FINDINGS BY THEME

1. FOOD AND DISEASE PREVENTION AND ILLNESS ATTENUATION

FOOD CHOICES FUNDAMENTALLY INFLUENCE HEALTH OUTCOMES. THE FIRST THINK TANK THEME FULLY ILLUSTRATED THIS POINT.

Think Tank participants had plenty to say about the connection between food and disease prevention and illness attenuation. Some key thinking is outlined below.

The world is getting younger and more urban, raising health concerns. Ten countries account for 59 per cent of world population. By 2025, 60 per cent of world population will live in major urban centers. Rising or fluctuating incomes are major determinants of food choices and population health. A connection among poverty, chronic disease and obesity is evident. 'Bad' calories are often cheaper than 'good' calories.

Food production systems can stifle new entrants. Today, 10 per cent of farms produce 90 per cent of farm output, a concentration that hinders the entry of smaller food producers who could serve organic, non-traditional or health-focused markets. Cost and volume requirements at the retail level also tend to discourage alternative approaches.

The world is flattening. New knowledge and innovation can and do occur anywhere, crossing borders and time zones with ease. Scientists now have 24/7 access to information to develop food-health opportunities on a wide range of fronts. The competitive and fluid nature of research results in complex interactions with trade and regulatory structures.

Food-health insight is growing faster than food-health systems. Knowledge of bio-actives, food components and food continues to grow. While completion of the Human Genome Project (2003) and other scientific advances will make it possible to develop personalized diets tailored for the individual, current food systems make such a prospect impractical at scale.

Taste and convenience often trump health issues. If a food is known as healthy or beneficial, but not perceived as convenient or tasty, many will choose otherwise.

Overall, it was agreed: foods can and will play a critical role in the health of the population. The complexity of factors at work generated much discussion but few concrete agreements.

Finding:

Consumers will only eat healthier if their needs for taste, convenience and financial value are met.

2. FOOD POLICY AND POPULATION HEALTH OUTCOMES

WHAT ROLE CAN FOOD POLICY AND PUBLIC HEALTH POLICY PLAY IN ACHIEVING DESIRED HEALTH OUTCOMES?

Studies confirm that Canadians generally do not eat a healthy diet. This results in an overall decline of the population's health. Understanding the importance of cost, taste and convenience in food decisions, we need to create an environment in which the healthy choice is also the easy choice. What contribution can public policy make?

Think Tank presentations and discussions focused on several elements of the food-health-policy nexus, such as:

Food labeling. Labeling is often complicated and either not understood or misunderstood. For example, calories are listed on a per-serving basis rather than what is contained in the entire package. The growth of natural health products has added yet another level of label confusion. Discussions explored how well the current labeling system is working and whether alternatives need to be developed.

Food economics. Energy-dense foods (high in fats/oils, sugars and grains) are considerably cheaper than fresh vegetables, fruits, nuts, fish and meats. The challenge, therefore, is to make the more expensive (and healthy) foods increasingly cost competitive relative to their energy-dense (and cheaper) alternatives.

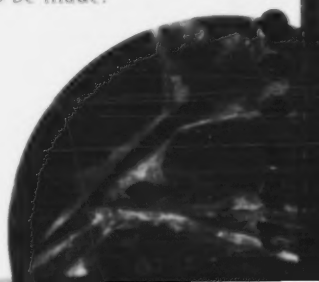
Despite these and other challenges, small steps can create momentum that, in time, will have a measurable impact. These steps could include:

1. Research – basic, clinical and population/culture trials as well as research on the effectiveness of food services and systems
2. Knowledge translation – transformation of research into practices, education, advocacy and policy
3. Application – implementation of the previous steps, resulting in healthier populations.

Think Tank participants urged that public policy begin with two basic questions:

1. If we agree on a systematic approach to improve health outcomes, how do we formulate such a system?
2. How can we measure the impacts of food and health approaches, from which sound policy can be developed?

By addressing these questions, sound policy can help us make the decisions that need to be made.



Cheese provides calories; high-quality protein; vitamins; and minerals, such as calcium, phosphorus and zinc.

3. INDUSTRY AND CONSUMER PERSPECTIVES

HEALTH CONCERNS DICTATE THE NEED TO CHANGE DIETS. GOVERNMENT POLICY COULD SUPPORT THIS. WILL INDUSTRY AND CONSUMERS GO ALONG? THE THIRD THINK TANK THEME CONSIDERED THE ISSUE.

Consumers will only eat healthier if their needs for taste, convenience and financial value are met. Industry, faced with many competitive pressures, will only supply a changed diet if consumers are willing to embrace it. Can this seeming chicken-and-egg dilemma be reconciled?

As the Think Tank heard, Pulse Canada is one example of an industry sector taking charge of this issue, charting a course in which healthy solutions can be provided by its peas, beans and lentils. This strategy has three elements:

1. Engaging the food industry
2. Providing research leadership
3. Transferring knowledge to consumers

Another example of industry responsiveness to health concerns is the ongoing replacement of trans fat in the Canadian diet. The increase in canola acreage runs parallel to the adoption of healthier oils by industry and consumers.

The emergence of food products with additional health benefits has added new dimensions to the development process. The new paradigm requires several steps, including health efficacy testing to substantiate health claims and gain consumer acceptance. Improved integration of the various steps is required with the need to break down the silos among the agriculture, food, nutrition and health industries. Improving the interaction among these players is key to identifying and filling knowledge gaps.

To continue to bring consumers healthier choices – consistent with demands for cost savings, taste and convenience – industry and the public sector must achieve:

1. Focused research investments targeted toward specific objectives (end points).
2. Better knowledge transfer – improved, simplified labels.
3. Food policies that balance health and safety.
4. Promotion of better food choices, with strategies to educate children.
5. Better alignment of the agriculture, food and health sectors, which have traditionally not worked together.

TAKING ACTION

WITH A SOLID PLATFORM OF UNDERSTANDING NOW SUPPORTING THE EFFORT, THE THINK TANK DISCUSSED WHAT COMES NEXT? SUCCESS DEMANDS WIDESPREAD COMMITMENT, ACTION AND INTEGRATION.

Suppose by 2020, there's a far-reaching change in the Canadian diet. Millions are now consuming fewer calories, with less sugar, salt and fat and more fresh fruits, vegetables and meats. Who benefits?

1. Society benefits from having a healthier population.
2. Governments benefit through reduced chronic disease or health system pressures.
3. Employers benefit from reduced absenteeism and greater productivity.
4. The health care community benefits by treating fewer chronic diseases.
5. Agriculture benefits by growing higher-value crops and livestock.
6. The food industry benefits by marketing higher-value products.
7. Consumers benefit by living better and longer.

Each of these groups stands to benefit substantially from a greater integration of food with health and has a part to play in helping to make this happen.

Changing behavior and systems to encourage food choices that lead to healthier outcomes is enormously challenging. The Think Tank identified four recommendations that can assist in bringing together the food and health industries to explore innovative solutions to this growing problem.

RECOMMENDATIONS:

1. Health and Food sectors working together on identified points of convergence. In other words, what are the challenges that can not be addressed by either industry alone? What are the realistic starting points that address a common opportunity and draw from available capacity and resources? This will require further exploration and discussions
2. Applying a systems approach to creating transformative innovations in food and health. This involves a multi-disciplinary approach to address the multiple interacting factors at play in the relationship of food and health. The complexity demands a strategic approach based on convergence and opportunity.
3. Addressing the complex behavioral challenge required to increase healthy food choice. Food choices are made in a complex environment that does not strongly encourage healthy

choices. There is a need to develop approaches to changing the food/choice environment in Alberta and elsewhere.

4. Influencing through education. Awareness and marketing are key elements of the food and health relationship. In education at the grade and high school levels and beyond there is ample scope to develop improved programs that begin the process of influencing behavior. It is time to evaluate these opportunities and develop a targeted education program.

The Alberta International Food and Health Think Tank was a starting point for an important conversation among the health industry, governments, agriculture, and the food industry. This report is designed to stimulate thinking and conversation about how Alberta can increase the connection between food and health.

Action:

Influencing through education. Awareness and marketing are key elements of the food and health relationship.

THANK-YOU TO THE PARTICIPANTS OF THE THINK TANK FOR THEIR VALUABLE CONTRIBUTION.

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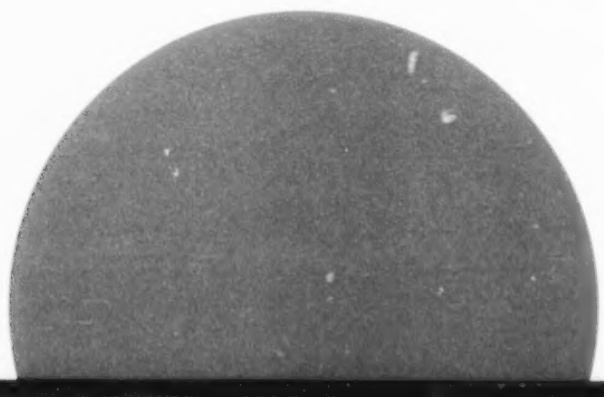

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